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ABSTRACT

The second of four guidebooks for the General Math student is designed to aid in developing computational skills. Topics covered include computation of interest on installment purchasing, discounts, cost of commercial transportation, balancing a budget, and using simple statistical information. A list of general goals for the course and overall strategies is given, then performance objectives are specified both for computational skills and for specific topics by the course. A course outline and teaching suggestions for each unit are included along with a skills pretest and posttest and with posttests for purchasing, transportation, and statistics. For other booklets in this set, see SE 014 881, and SE 014 882. (DT)

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AUTHORIZED COURSE OF INSTRUCTION FOR THE QUINMESTER PROGRAM

DADE COUNTY PUBLIC SCHOOLS

Consumer Math 2

5285.22

Mathematics

DIVISION OF INSTRUCTION • 1971

ED 067287

QUINMESTER MATHEMATICS

COURSE OF STUDY

FOR

CONSUMER MATH 2

5285.22

PURCHASING CONSUMER GOODS

(EXPERIMENTAL)

DIVISION OF INSTRUCTION
Dade County Public Schools
Miami, Florida 33132
1971-72

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PREFACE

The following course of study has been designed to set a minimum standard for student performance after exposure to the material described and to specify sources which can be the basis for the planning of daily activities by the teacher. There has been no attempt to prescribe teaching strategies; those strategies listed are merely suggestions which have proved successful at some time for some class.

The course sequence is suggested as a guide; an individual teacher should feel free to rearrange the sequence whenever other alternatives seem more desirable. Since the course content represents a minimum, a teacher should feel free to add to the content specified.

Any comments and/or suggestions which will help to improve the existing curriculum will be appreciated. Please direct your remarks to the Consultant for Mathematics.

All courses of study have been edited by a subcommittee of the Mathematics Advisory Committee.

CATALOGUE DESCRIPTION

One of four quins which will develop computational skills with non-negative rational numbers.

COURSE DESCRIPTION

A non-sequential course of study based on the book, Mathematics for Daily Living. Includes computation of interest on installment purchasing, discounts on purchases, and costs of commercial transportation. The course is designed to aid the student in developing computational skills as well as developing an understanding of intelligent purchasing of consumer goods and balancing the family budget.

This course is designed for the General Math student with average math ability.

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GOALS

1. To develop skill in computation with percents and decimals.
2. To help the student become an intelligent purchaser of consumer goods.
3. To develop an understanding of the costs involved in travel.
4. To create an awareness of the costs involved in maintaining a family.

OVERALL STRATEGIES

Topic	Chapter
Purchasing Consumer Goods	3
Commercial Transportation	2
Statistical Information	13
Review of Skills	14

Mathematics for Daily Living by Harry Lewis is the basic text used, in which Chapters 3, 2, and 13 comprise the core to be taught in Consumer Math 2. A Skills Pretest/Posttest A is designed to be used as a diagnostic tool in helping the teacher assess the level of his class. For those classes scoring low on Pretest A, emphasis should be placed on the review of basic skills throughout the course. Classes with higher levels of skills ability will spend the greater part of their time on the applications found in the sections on installment purchases, consumer purchases, costs of commercial transportation and balancing the family budget.

The Pretest/Posttest A is designed to be used at the end of the quin as well as at the beginning in order to assess the level of overall achievement attained by individual students and by the class as a whole.

PERFORMANCE OBJECTIVES

FOR COMPUTATIONAL SKILLS

The student will:

1. Perform operations with decimals.
2. Convert dollars to cents, and cents to dollars.
3. Write percents in their decimal form.
4. Write decimals in their percent form.
5. Write fractions in their decimal and percent forms.
6. Round decimals to a specified place.
7. Solve for an unknown term in a proportion.
8. Solve the three basic types of percent problems.

FOR SPECIFIC TOPICS COVERED IN CONSUMER MATH 2

The student will:

1. Find cost per unit of consumer items.
2. Make correct change given certain purchase amounts.
3. Compute discount and discount rate on a purchase.
4. Compute service charges on various kinds of store charge accounts.
5. Compute total charge for a rental car given rate per day, mileage and insurance charges.
6. Read bus, train, and airline schedules.
7. Prepare a complete monthly family budget for a given income.
8. Compute interest on installment purchases.
9. Find the measures of central tendency for given statistical data.
10. The student will be able to sketch and read a bar graph, line graph, and circle graph.

COURSE OUTLINE

I. Consumer Goods

A. Supermarket purchases

B. Making change

C. Discount on a purchase

D. Installment purchases

E. The charge account

II. Commercial Transportation

A. Renting a car

B. Airline, railroad and bus transportation

III. The Family Budget

IV. Statistical Information

A. Mean, mode, median

B. Graphs

SUGGESTED STRATEGIES

A review of basic skills with percents and decimals may be necessary, based on the level of the class and their overall performance on the Pretest A. The minimum requirements for the course are designed to increase the student's computational skills. The maximum requirements of the course include an understanding of installment purchases, consumer purchases, costs of commercial transportation and balancing the family budget.

I. Consumer Goods

1. Empty containers of differing sizes used for the same product are useful in illustrating price differentials in unit price.

2. As a class project, a simulated store can be set up and purchases made.

3. Have students check various stores for their rates on installment (time) purchases.

4. Students may check with several area department stores for differing policies with regard to charge accounts, minimum balance and service charges.

II. Commercial Transportation

1. Check various auto rentals for types of cars, daily rate, mileage rates and insurance charges. Compute differences in charges from "Dollar-A-Day Rent a Car," "Econo Car," "Hertz," and "Avis."

2. Have students compare special weekly rates for rentals to charges for renting a car for a week, based on the daily rate.

3. Obtain train, bus, airline schedules and fares in order to determine time and fares for all 3 methods of travel. Have students compare costs. Check special excursion rates as well.

III. The Family Budget

1. Have students make out a budget for their own family, based on the income of their parent(s).

2. Have each student make out a budget for himself, based upon a fixed amount of money. Each student must account for transportation, lunch, clothing costs, and entertainment.

SKILLS PRETEST/POSTTEST A

1. a. $\begin{array}{r} 4.07 \\ \times\ .14 \\ \hline \end{array}$

   b. $\begin{array}{r} \$0.67 \\ \times\ 0.09 \\ \hline \end{array}$

   c. $1.116 \div 3.6$

   d. $1.458 \div 54$

   e. $.81 \div .9$

   f. $6.23 + 36 + 126.2$

   g. $\$93.27 - \$47.39$

   h. $8000 - 24.6$

   i. $12.04 + 96.32 + 43.77$

   j. $12 - .92$

2. a. $4¢ = \$_____$

   b. $3.9¢ = \$_____$

   c. $\$0.41 = _____¢$

3. Write as a decimal.
   a. 5% b. 123% c. $8\frac{1}{2}\%$

4. Write as a percent.

   a. .23 b. 5.3 c. .07

5. Write as a decimal and a percent.

   a. $\frac{4}{5}$ b. $\frac{9}{25}$ c. $\frac{3}{50}$ d. $\frac{7}{8}$

6. Round off to the nearest cent.

a. \$6.925 b. \$17.284

Round off to nearest whole.

c. 28.46 d. 9.872

Round off to nearest hundredth.

e. 2.467 f. 48.382

7. Find the value of n in each of the proportions.

a. $\frac{n}{5} = \frac{6}{8}$ b. $\frac{14}{n} = \frac{20}{11}$

Round the answers to nearest tenth.

c. $\frac{11}{23} = \frac{9}{n}$ d. $\frac{12}{7} = \frac{n}{15}$

8. a. What number is 32% of 112?

b. 15 is what percent of 54? (to the nearest tenth)

c. 4.5% of what number is 10.35?

PRETEST KEY

1. a. .5698
   b. $ .0603
   c. .31
   d. .027
   e. .9
   f. 168.43
   g. $45.88
   h. 7975.4
   i. 152.13
   j. 11.08

2. a. $ .04
   b. $ .039
   c. 41¢

3. a. .05
   b. 1.23
   c. .085 ($.08\frac{1}{2}$)

4. a. 23%
   b. 530%
   c. 7%

5. a. .8 80%
   b. .36 36%
   c. .06 6%
   d. .875 87.5%

6. a. $6.93
   b. $17.28
   c. 28
   d. 10
   e. 2.47
   f. 48.38

7. a. 3.75
   b. 7.7
   c. 18.8
   d. 25.7

8. a. 35.84
   b. 27.8%
   c. 230

POSTTEST B

PURCHASING

1. Change to ounces

   a. 5 lb. b. 2 lb. 10 oz.

2. Change to pints only.

   a. 7 qt. b. 15 qt. 1 pt.

3. What is the cost per ounce if the total cost is 76¢ for 2 quarts?

   (Round to nearest tenth of a cent)

4. If 6 x b = 24, what is b?

5. Which is the better buy, two 12-oz. cans of vegetable juice for 29¢ or one 1-qt., 14-oz. can of vegetable juice for 45¢?

6. If you purchase something for $2.53, what change will you receive from $5.00, using the smallest number of coins possible?

1¢	5¢	10¢	25¢	50¢	$1
_____	_____	_____	_____	_____	_____

7. Find the discount and the selling prices of an item that regularly sells for $145.00, if the discount rate is 31%.

8. If the original price of an article is $20.00 and the discount is $5.00, what is the discount rate?

9. How much will the down payment be on an item that sells for $690.00 if the down payment rate is 15%?

TRANSPORTATION

1. Use Table of Rates on p. 55 to answer the question regarding renting cars on a daily basis.

	Base Rate	No. of Miles	Cost Per Mile	Mileage Cost	Total Cost
Standard Sedan	____	50	_____	_____	_____

2. At 35.9¢ per gallon, what is the cost of 13 gallons of gasoline?

3. Find the difference:

$$\begin{array}{rr} 18 \text{ hr.} & 11 \text{ min.} \\ -12 \text{ hr.} & 19 \text{ min.} \\ \hline \end{array}$$

4. Find the time from 2:53 A.M. to 9:05 A.M.

5. What is the cost of a one-way ticket from New York to Red Bank?

   (Use the table on p. 73)

6. The symbols "Lv" and "Ar" stand for _____ and _____. They are used in reading airplane schedules.

7. Use the flight schedule on p. 78 to tell when Flight No. 333 will arrive in San Francisco.

8. Use Family-Plan Discount on p. 84 to answer the question.

Father's Fare	Class	Person Traveling	Fare
$216	1st	Wife	_____

9. What is the cost of $800 worth of insurance on baggage and personal effects for a period of 28 days? Use table on p. 89.

STATISTICAL INFORMATION

1. Name three types of averages.

2. Find the mode for:

   1,3,3,3,3,4,5,5,5,7,7,8,9,9

3. What is the mean for:

   2,3,3,4,6,7,7,7,8,9,9,13

4. Name 4 types of graphs studied.

5. If you were graphing temperatures for a month, which type graph would be best?

6. What items would you include in a family budget? (List at least 6.)

7. Use the graph on p. 543 to answer the following question:

   What week's sales were the smallest?

8. Use the graph on p. 544 (top) to answer the following:

   What was Frank's score during the 6th week?

POSTTEST KEY (B)

PURCHASING

1. a. 80 oz. b. 42 oz.
2. a. 14 pt. b. 31 pt.
3. 1.2¢ per ounce
4. b = 4
5. One 1-qt., 14 oz. can is better
6. 1¢ 10¢ 25¢ $1

   2 2 1 2
7. $44.95 $100.05
8. 25%
9. $103.50

TRANSPORTATION

1. Base Rate Cost Per Mileage Total Cost

   12 $ .12 $6.00 $18.00
2. $4.67
3. 5 hr. 52 min.
4. 6 hr. 12 min.
5. $2.13
6. Leaving, arriving
7. 8:05
8. $162.00
9. $12.40

STATISTICAL INFORMATION

1. Mean, median, mode

2. 3

3. 6.5

4. Any 4 of the following:

   line, bar, circle, rectangle, pictograph

5. Line

6. Examples:

   Food, utilities, rent, transportation, clothes, savings, insurance, dues, memberships

7. 5th

8. 105